

The effect of temperature environment on moral decision-making: Investigating the reproducibility

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(温度環境が道徳的意思決定に及ぼす影響: 再現性の観点からの検討)

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論 文 内 容 の 要 旨

Temperature is one of the major environmental factors that people are exposed to on a daily basis, often in conditions that do not afford control. It is known that heat and cold can influence a person's productivity and performance in simple tasks. With respect to social cognition, it has also been suggested that temperature impacts on relatively high-level forms of decision-making. For instance, previous research demonstrated that cold temperature promotes utilitarian judgment in a moral dilemma task. In this moral dilemma task, they offered dilemmas reflecting situations in which the subject can save a larger number of lives by sacrificing one person's life. Utilitarian judgment in this task means that a subject chooses to save more people by sacrificing a victim. This temperature effect could be due to psychological processing, when a cool temperature primes a set of internal representations (associated with "coldness"). Alternatively, the promotion of utilitarian judgment in cold conditions could be due to physiological interference from temperature, impeding on social cognition. Refuting both explanations of psychological or physiological processing, however, it has been suggested that there may be problems of reproducibility in the literature on temperature modulating complex or abstract information processing.

To examine the role of temperature in moral decision-making, we conducted a series of experiments using ambient and haptic temperature with careful manipulation checks and modified task methodology. Experiment 1 (Chapter 2) manipulated room temperature with cool (21°C), control (24°C) and hot (27°C) conditions and found only a cool temperature effect, promoting utilitarian judgment as in the previous study. Experiment 2 (Chapter 3) manipulated the intensity of haptic temperature but failed to obtain the cool temperature effect. Experiments 3 and 4 (Chapter 4 and 5) examined the generalizability of the cool ambient temperature effect with another moral judgment task and with manipulation of exposure duration. However, again there were no cool temperature effects, suggesting a lack of reproducibility. Despite successful manipulations of temperature in all four experiments, as measured in body temperature and the participants' self-reported perception, we found no systematic influence of temperature on moral decision-making. Meta-analysis of the four experiments (Chapter 6) showed that the overall data tended to provide strong support in favor of the null hypothesis.

In conclusion, this thesis provides detail the effect of ambient and haptic temperature on social judgment, focusing on the effect of cold temperature in a moral dilemma task. In one of the four experiments here, we found a cool temperature that promoted utilitarian judgment, similar to the previous study. The remaining experiments, however, produced weak effects in the opposite direction or no effect of temperature on moral judgment. This occurred despite the fact that our temperature manipulations elicited reliable differences in perceptions of coldness, feelings of comfort, and physiological measurements of skin temperature. We propose that, at least in the range of temperatures from 21 to 27 °C, the cool temperature effect in moral decision-making is not a robust phenomenon.